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EXAMINER

LU, C CAIXIA

ART UNIT

PAPER NUMBER

1713

DATE MAILED: 07/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/973,261

Applicant(s)

LUNDQUIST ET AL.

Examiner

Caixia Lu

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) 27-50 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 51 is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☒ Claim(s) 1-26 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-26 and 51, drawn to a catalyst composition, classified in class 502, subclass 108.
  - II. Claims 27-50, drawn to a polymerization process, classified in class 526, subclass 170.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the catalyst matrix can be used in a materially different process such as hydrogenation process.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. Because these inventions are distinct for the reasons given above and the search required for one of the groups is not required for the rest of the groups, restriction for examination purposes as indicated is proper.

Art Unit: 1713

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

6. This application contains claims directed to the following patentably distinct species of the claimed invention: (i) various olefin-based material of Claims 4 and 11; and (ii) various catalyst components of Claims 15, 17, 19 and 20.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, Claim 1 is generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the

Art Unit: 1713

case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35

U.S.C. 103(a) of the other invention.

7. During a telephone conversation with Mr. Richard Clikeman on June 12, 2003 a provisional election was made with traverse to prosecute the invention of Group I, Claims 1-16, 18, 21-26 wherein the elected species are (i) divinylbenzene polymers, (ii) bis(cyclopentadienyl)zirconium methyl hydride, and (iii) siloxanes. It is noted that siloxanes and divinylbenzene polymers both are species of olefin based material, since the divinylbenzene polymers appears in the claims prior to siloxane, the examiner treats the election of species as though divinylbenzene is the elected species for now.

Affirmation of this election must be made by applicant in replying to this Office action.

Claims 17, 19, 20, and 27-50 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

8. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

9. The search result indicated that the elected species is novel, thus, the search is now extended to the rest of the species. Currently, Claims 1-27 and 51 with all of the species are under examination.

***Specification***

10. The disclosure is objected to because of the following informalities: page 4, line 15, in view the definition of olefin-based materials as whole throughout the disclosure, it seems the "olefin-based materials" can be organic or inorganic materials, thus, the term "and" should be replaced with --or-- in line 15 in order to have a logical follow.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 1-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1

The limitation of "the olefin-based material" of line 4 is confusing. it seems that the limitation of "the olefin-based material" of line 4 refers the "at least one olefin-based material of line 2, however, these two olefin-based material are different: "the olefin-based material" of line 4 is before the hydrozirconation and the "at least one olefin-based material of line 2 is the product of the hydrozirconation.

Claim 15

Line 3, the "-" between "pentamethylcyclo" and "pentadienyl" should be deleted.

Claims 17 and 20

The limitation of the hydrozirconated matrix as a Ziegler-Natta catalyst lacks antecedence because in Claim 1, the catalytic component of the hydrozirconated matrix is a zirconium component chemically bonded to through a hydrocarbon group to a "olefin-based material".

Claim 24

Lines 3-4, it is illogic to define the "at least one atom" (only one) as "combinations thereof" (more than one).

Claim 25

Line 4, the extraneous phrase "is the same or different" should be deleted since there is only one  $Cp^2$  in the formula.

***Allowable Subject Matter***

13. Claims 1-27 and 51 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

The instant claims are directed to a catalyst composition comprising hydrozirconated matrix--a zirconium component chemically bonded to a support through a hydrocarbon group prepared by reacting a zirconium compound with a support containing plural olefin groups through hydrozirconation reaction.

Furtek et al. (US 5,362,824) teaches a supported catalyst composition wherein a zirconocene is supported on a styrene divinyl benzene copolymer particles. However, Furtel does not teach or reasonably suggest that the zirconocene is chemically bonded to the polymer support through a ethylene group. As a mater of fact, a skilled artisan understands that Furtek's zirconocene is considered to be physically absorbed on the

Art Unit: 1713


surface of polymer support. The supported catalyst compositions of the instant claims are different from the cited prior art and, thus, deemed to be novel.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caixia Lu whose telephone number is (703) 306-3434.

The examiner can normally be reached on 9:00 a.m. to 3:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (703) 308-2450. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1193.

  
Caixia Lu, Ph. D.  
Primary Examiner  
Art Unit 1713

CL  
June 29, 2003